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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,586	11/28/2003	Osafumi Nakayama	1086.1188	5657

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EXAMINER	
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2622	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/722,586	NAKAYAMA ET AL.	
	Examiner	Art Unit	
	RICHARD M. BEMBEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,8 and 10-12* is/are rejected.

7)☒ Claim(s) *7 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Election/Restrictions

3. Applicant's election of Species 1 in the reply filed on 27 May 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claim 4 is withdrawn from consideration because it is based on a non-elected species.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 8, 10 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,642,168 issued to Masaki.

Regarding **claim 1**, Masaki discloses a picture inputting apparatus comprising:

a solid state image pickup device having a high-resolution pixel array consisting of a plurality of photo-receptive elements disposed at a high density for converting a formed image into a pixel value of an electric signal by photoelectric conversion *(c. 4, ll. 44-61 and Figure 1)*;

a low-resolution whole picture scanning unit which outputs low-resolution whole picture data by reading out and scanning the wholeness of an imaging range with the pixel array resolution lowered *(c. 5, ll. 35-59: "...the whole of the picture 20 is shrunk..." and Figures 2(1) and 3, "picture 21A")*;

a high-resolution partial picture scanning unit which outputs high-resolution partial picture data by partially reading out and scanning the imaging range with the pixel array high-resolution kept *(c. 5, l. 60 – c. 6, l. 3 and Figures 2(2) and 3, "picture 21B")*;

a switching unit which provides a switching between the low-resolution whole picture scanning unit and the high-resolution partial picture scanning unit within a predetermined frame period to thereby output in sequence the low-resolution whole picture data and the high-resolution partial image data at a speed equal to or greater than the video rate *(c. 8, ll. 8-35)*; and

an image processing unit which automatically determines the extracting position of the high-resolution partial picture at the next frame, based on the low-resolution whole picture data output from the low-resolution whole picture scanning unit, to thereby instruct the high-resolution partial picture scanning unit on the extracting position *(c. 8, l. 66 – c. 9, l. 3)*.

Regarding **claim 2**, refer to the rejection of claim 1 and Masaki further discloses:

a low-resolution whole picture accumulation unit which accumulates the low-resolution whole picture data output as a result of readout scanning of the pixel array *(c. 8, ll. 8-25 and Figure 1, "picture converter 2" and "picture processor 3")*;

a whole picture data transmission unit which reads out images accumulated in the low-resolution whole picture accumulation unit to shape the low-resolution whole picture data into a single piece of picture data in a predetermined format, for the output to the outside *(c. 8, ll. 8-25 and Figure 1, "picture converter 2" and "picture processor 3")*;

a high-resolution partial picture accumulation unit which accumulates the high-resolution partial picture data output as a result of the readout scanning of the pixel array *(c. 8, ll. 8-20, 26-57 and Figure 1, "picture converter 2" and "picture processor 3"; also see Figure 7)*; and

a partial picture data transmission unit which reads out images accumulated in the high-resolution partial picture accumulation unit to shape the high-resolution partial picture data into a single piece of picture data in a predetermined format, for the output to the outside *(c. 8, ll. 8-20, 26-57 and Figure 1, "picture converter 2" and "picture processor 3"; also see Figure 7)*.

Regarding **claim 8**, refer to the rejection of claim 1 and Masaki further discloses that the image processing unit automatically determines the extracting position of a high-resolution picture at the next frame based on the high-resolution partial picture data in addition to the low-resolution whole picture data and instructs the high-resolution partial picture scanning unit on the determined extracting position *(refer to c. 8, ll. 20-57 and Figure 7 regarding extracting position of a high-resolution picture; refer to c. 8, l. 66 – c. 9, l. 3 regarding automatic determination)*.

Regarding **claim 10**, refer to the rejection of claim 1 and Masaki further discloses that the image processing unit determines the extracting position of a high-resolution partial picture based on the execution of an image processing

program externally loaded and retained or on an external instruction *(c. 8, l. 66 - c. 9, l. 3)*.

Regarding **claim 11**, refer to the rejection of claim 1 and Masaki further discloses a picture transmission unit which converts into analog picture signals low-resolution whole picture data output from the low-resolution whole picture scanning unit and high-resolution partial picture data output from the high-resolution partial picture scanning unit, to transmit the obtained analog picture signals to an external image processor via a transmission path *(refer to c. 8, l. 4 – c. 9, l. 3 and Figures 1 and 7, low and high resolution transmitted to "monitor 4")*.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 3, 5/3 and 6/3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki in view of US Patent No. 5,262,871 issued to Wilder et al., hereinafter "Wilder".

Regarding **claim 3**, Masaki discloses the limitations required by claim 1, including a solid state image pickup device, a low-resolution whole picture

scanning unit and a high-resolution partial picture scanning unit *(refer to the rejection of claim 1)*. Masaki further discloses that the solid state image pickup device includes: a plurality of photo-receptive elements which are two-dimensionally arranged in N.sub.1 rows and N.sub.2 columns *(c. 4, ll. 50-52)*. However, Masaki does not disclose that the solid state image pickup device includes: a column selection line and a row selection line which select individually the plurality of photo-receptive elements to allow output of a pixel value; two output lines disposed at each of the plurality of photo-receptive elements; and a plurality of filters which calculate and output the sum or the mean value by connecting to their respective inputs one output lines of the photo-receptive elements on an n.sub.1 rows and n.sub.2 columns pixel basis where n.sub.1 and n.sub.2 are integers obtained by dividing high-resolution N.sub.1 rows and N.sub.2columns by low-resolution m.sub.1 rows and m.sub.2 columns, respectively, where the pixel count of the N.sub.1 rows and N.sub.2 columns provides a high-resolution picture while the pixel count of m.sub.1 rows and m.sub.2 columns less than the pixel count of the N.sub.1 rows and N.sub.2 columns provides a low-resolution picture, wherein the low-resolution whole picture scanning unit collectively selects the photo-receptive elements for each n.sub.1 rows and n.sub.2 columns for each of the plurality of filters and simultaneously allows filter outputs of m.sub.1 rows and m.sub.2 columns to be output in the form of low-resolution whole picture signals, and wherein the high-resolution partial picture scanning unit scans the photo-receptive elements in k.sub.1 rows and k.sub.2 columns which are designated as the extracting

position within the N.sub.1 rows and N.sub.2 columns to allow pixel values to be output as high-resolution partial picture signals from the other output lines.

Wilder discloses a solid state image pickup device including:

a plurality of photo-receptive elements which are two-dimensionally arranged in N.sub.1 rows and N.sub.2 columns *(Figure 10)*;

a column selection line and a row selection line which select individually the plurality of photo-receptive elements to allow output of a pixel value *(c. 10, l. 52 - c, 11, l. 7 and Figure 10)*;

two output lines disposed at each of the plurality of photo-receptive elements *(c. 16, l. 40 – c. 17, l. 43 and Figure 10, "OSL1" and "OSL2")*; and

a plurality of filters which calculate and output the sum or the mean value by connecting to their respective inputs one output lines of the photo-receptive elements on an n.sub.1 rows and n.sub.2 columns pixel basis where n.sub.1 and n.sub.2 are integers obtained by dividing high-resolution N.sub.1 rows and N.sub.2columns by low-resolution m.sub.1 rows and m.sub.2 columns, respectively, where the pixel count of the N.sub.1 rows and N.sub.2 columns provides a high-resolution picture while the pixel count of m.sub.1 rows and m.sub.2 columns less than the pixel count of the N.sub.1 rows and N.sub.2 columns provides a low-resolution picture *(c. 16, l. 40 – c. 17, l. 43 and Figure 10; especially see c. 17, ll. 33-43, "superpixels")*.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the dual sense line structure disclosed by Wilder for the solid state image pickup device disclosed by Masaki to allow for

rapid scanning and analyzing of a scene (using the low-resolution method) in order to find an area of interest and then produce a high-resolution image of the area of interest (see Wilder, abstract).

Using the same reasoning, it would also be obvious to a person having ordinary skill in the art at the time of the invention to use the duel sense line structure disclosed by Wilder in conjunction with the low-resolution whole picture scanning unit and high-resolution partial picture scanning unit disclosed by Masaki to (for the low-resolution) collectively select the photo-receptive elements for each n.sub.1 rows and n.sub.2 columns for each of the plurality of filters and simultaneously allows filter outputs of m.sub.1 rows and m.sub.2 columns to be output in the form of low-resolution whole picture signals, and (for the high-resolution) scan the photo-receptive elements in k.sub.1 rows and k.sub.2 columns which are designated as the extracting position within the N.sub.1 rows and N.sub.2 columns to allow pixel values to be output as high-resolution partial picture signals from the other output lines. Both Masaki and Wilder seek to accomplish the same task, i.e. scanning a large sensor area quickly by using a low resolution read out in order to find an area of interest and then viewing the area of interest in high-resolution.

Regarding **claim 5/3**, refer to the rejection of claim 3 and Masaki further discloses that the low-resolution whole picture scanning unit and the high-resolution partial picture scanning unit perform readout scanning such that the

low-resolution whole picture and the high-resolution partial picture have the same pixel size *(c. 4, ll. 57-61, c. 5, ll. 6-11, c. 6, l. 49 – c. 6, l. 3, 512x484 NTSC)*.

Regarding **claim 6/3**, refer to the rejection of claim 3 and Masaki further discloses that the low-resolution whole picture scanning unit and the high-resolution partial picture scanning unit perform readout scanning such that the low-resolution whole picture and the high-resolution partial picture have the same pixel size which is expressed by a matrix of 512.times.480 pixels in NTSC, 768.times.576 pixels in PAL or 640.times.480 pixels in VGA *(c. 4, ll. 57-61, c. 5, ll. 6-11, c. 6, l. 49 – c. 6, l. 3, 512x484 NTSC)*.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki in view of Applicant's Admitted Prior Art (AAPA).

Regarding **claim 12**, Masaki discloses the limitations required in claims 1 and 11, including a picture transmission unit which converts low-resolution and high-resolution picture data into analog picture signals for transmission (see above). However, Misawa does not disclose that the analog picture signals are transmitted in parallel.

AAPA discloses outputting analog low-resolution and high-resolution picture signals in parallel *([0016]-[0017])*. Therefore, it would have been obvious a person having ordinary skill in the art at the time of the invention to output analog low-resolution and high-resolution picture signals in parallel as disclosed

by AAPA in the picture inputting apparatus disclosed by Masaki in order view a whole image and a partial image simultaneously.

Allowable Subject Matter

9. Claims 7 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following are relevant references that disclose an image sensor may be driven to produce low-resolution whole image data and high-resolution partial image data:

US Patent No. 6,512,858 issued to Lyon et al.

US Patent No. 6,204,879 issued to Koseki et al.

US Patent No. 5,058,190 issued to Levitt et al.

US Patent No. 6,084,939 issued to Tamura

US Patent No. 5,003,264 issued to Koizumi et al.

US Patent No. 6,839,452 issued to Yang et al.

US Patent No. 7,106,374 issued to Bandera et al.

US Patent No. 7,408,572 issued to Baxter et al.

The following are relevant references that disclose object detection:

US Patent No. 5,644,386 issued to Jenkins et al.

US Patent No. 5,323,987 issued to Pinson

US Patent No. 7,162,101 issued to Itokawa et al.

US Patent No. 7,110,023 issued to Utsumi et al.

US Patent No. 4,800,288 issued to Inagaki et al. discloses photocells connected to plural output lines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD M. BEMBEN whose telephone number is (571)272-7634. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David L. Ometz/
Supervisory Patent Examiner, Art Unit 2622

RMB